AN INAUGURAL ESSAY

ON

ANEURISM;

for the

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By

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Aneurism is a term of Greek origin, expressive of dilatation, and was probably employed to designate the tumours dependant on the dilatation of one or more coats of the arteries.

It has however been employed in a more general sense signifying any tumour communicating with the calibre of the vessel. According to this latter definition, three conditions may have been noticed.

The tumour has been observed to be connected with the partial destruction and dilatation of the immediate coats of the artery; constituting what has been termed a true aneurism.

When the tumour has arisen from the division of the coats, and consequent effusion of blood contained in an adventitious sac, it has received the name

of false aneurism.

The term, varicose aneurism has been applied to the tumour formed by the dilatation of the vein, having a direct communication with the artery.

It is to the first species, or true aneurism, that we beg leave to invite your attention on this occasion.

Different opinions have been entertained by writers on this subject, with regard to the Formation of aneurism, and as they all appear to be supported on very plausible grounds, and are so well known, it would be useless for us to recapitulate them, — suffice to say that the opinions of Dr. William Hunter, and all those who coincide with him, in regard to the destruction of the external and middle coats, and an inability of the internal coat to resist the force of the blood without dilatation is entirely refuted by the experiments of Mr John Hunter and Mr Home, who dissected off the outer coats of an artery, and found that the inner coat alone

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was capable of carrying on the circulation without any increase of size.

The generally received opinion of the present day is, that advanced by Sennertus Elsenurus and others; which is, that aneurism is formed by the rupture of the internal and middle with dilatation of the external or cellular coat; this opinion was revived by Scarpa; this destruction may take place from a variety of causes, according to Hodgson. " one of the most frequent appearances of disease, in the coats of arteries, is a deposition of atheromatous or purulent matter in the cellular membrane that connects the Internal and Middle coats of the vessel; the diseased part is of an opaque yellow colour, and generally elevated from the surrounding surface, Ulcerations sometimes take place on the surface of these elevations, and penetrating the Middle coats of the artery, give rise to aneurism." Again " The deposition of calcareous matter in the coats of arteries by exciting irritation as a foreign body gives rise to ulceration, which penetrat-

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the internal and middle coats produces aneurism, the cause of these depositions we cannot account for, and on the whole we must allow that the origin of aneurism is very obscure."

As aneurism may originate in any of the arteries of the body, it may be proper, for the sake of distinction, to divide them into two kinds or classes, viz. External and Superficial, or Internal and Deep Seated. Thus aneurisms situated beyond the reach of art may be classed under the head of Internal Aneurism. To this division there may possibly be advanced an objection with respect to the Abdominal Aorta, which Sir Astley Cooper was venturesome enough to tie; but which operation has not since been repeated, and as his case terminated unfavourably we think the ~~[illegible]~~ objection will not hold. With this view of the subject we will proceed to give some of the symptoms of aneurism.

In the External, or Superficial True Aneurism, the attention of the patient is attracted by a throbbing

thrilling sensation in some particular part, and he generally discovers a small pulsating tumour; which on pressure disappears; but on removal of the pressure soon returns, it is not attended with any pain or discoloration of the part: an aneurism when once formed, increases to a great size, and in proportion as it increases, the pulsations become less perceptible; this circumstance may be owing to the loss of elasticity in the coats of the aneurismal sac, it may also be owing to the coagula of blood formed in the sac, an occurrence which generally takes place; the disease advancing constitutional disturbance comes on, the parietes of the sac are thinned, a gangrenous eschar forms on the surface of the tumour; from which on its detachment, or from violent exertion, causing a rupture of the parietes of the sac, the patient perishes from hemmorrhage.

During the progress of an aneurism the affected limb becomes cold and oedematous, the neighbouring parts are more or less affected, bones are absorbed and

rendered carious, the pulsation of the artery, below the sac, becomes weak and small, and dissections have shown that the artery is much contracted in size.

Aneurism of the extremities may sometimes be mistaken for simple tumours, especially when not attended by pulsation; and on the other hand, if tumours are situated in the immediate vicinity of a large artery, they may be taken for aneurism: a pulsatory motion being communicated to them by the artery. To distinguish an aneurism from a tumour when not attended by pulsation, pressure is to be made on that portion of the artery situated between the heart and the tumour; when, if it be an aneurism the tumour will become flaccid, and if pressure be made on the sac, at the same time, its bulk will be further diminished; but when the pressure is removed it regains its original size: by continued pressure a pulsation may be discovered which was not perceivable on a more partial examination.

The symptoms of Internal or Deep

Seated Aneurisms are very equivocal, as the tumour is rarely perceptible above the integuments, and as the train of symptoms bear some resemblance to particular diseases of the heart. According to Hodgson "The pulse at the wrist is feeble and intermitting, the action of the heart irregular, and attended with frequent palpitations, a sense of constriction across the chest, with an intense pain extending from the sternum down the arms, and a difficulty in respiration proportionate to the size of the tumour: when the sac arises from the anterior part of the ascending aorta it projects opposite the cartilages of the 5th and 6th ribs, which are generally absorbed, and the tumour appears externally;—when it originates from the anterior part of the arch of the aorta the cartilages of the 4th and 5th are consumed; and when it arises from the upper part of the arch of the aorta, or from the root of the Arteria innominata, it ascends above the Sternum and Clavicles".—according to Dr Gibson "there are several

diseases about the chest, whose symptoms bear a striking similitude to aneurism of the aorta, such as enlargement of the bronchial glands, collections of serum or pus which by pressure on the heart force it towards the right side of the chest, where it may be felt pulsating strongly; on the other hand, aneurism of the thoracic aorta from its pressure on the lungs, will sometimes give rise to symptoms, resembling those of phthisis pulmonalis. —

The danger arising from aneurisms is not always to be referred to hemmorhage, they sometimes prove fatal from pressure on surrounding parts; a case of this kind occurred at the Hospital in this city, where the patient after a great deal of agony died from suffocation, in consequence of an aneurism situated at the arch of the aorta; in this case there were no marks of disease in the trach of the aorta: A case similar to this is mentioned by Sir Astley Cooper; where the pharynx was so contracted as not to admit a bougie of the size of

a goose quill, from an aneurism of the carotid; when, however, hemmorrhage does take place, it is either from the rupture of the parietes of the sac, or from the detachment of the ulcerated portion, or gangrenous eschar, on the surface of the tumour: a case of this kind having occurred in this city, a short time since, which we had several opportunities of seeing, through the kindness of Dr. Harris, under whose care the patient was, it may not be improper here to mention it. —

The patient, a sailor aged 46, states, that whilst lying in his cot, something gave way with a noise like the report of a pistol, the tumour was then the size of a shell bark, it gradually increased, on his passage home he was bled frequently, and put on a low diet, — 2 Nov. 29th tumour of the size of a mans fist, — integuments very thin at apex, tumour presents above the sternum, clavicle partially displaced, complains of pricking pain in the tumour, relieved by a soap plaster, — Jan 18th distressing pain in the left shoulder extending down the arm, referred to

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pressure on the axillary plexus.— 20th needles introduced into the arm with prompt relief.— Feby 18th part of the tumour has become tense, assuming a conical shape or eminence like the pointing of an abscess,— skin of a soft feel, dark purple colour.— March 13th slight oozing of blood from the ulceration.— 17th oozing, spits at times small coagula of blood.— 23rd slough seperated, coagulum has protruded.— 28th coagulum came away, died in two minutes.

The above case is interesting, from the suddenness of its appearance, from there being no appearance of disease in other parts of the aorta, from the relief experienced by the application of the needles, and from the haemoptesis that occurred; circumstances which we leave to abler hands than ours to explain.

Aneurisms of spontaneous origin, are generally found to be situated at or near the flexure of an artery.

Aneurisms are exceedingly common in the aorta and Popliteal arteries; the vessels next to these affected,

are, the Crural, common Carotid, Subclavian and Brachial. The Temporal and Occipital arteries, and those of the Arm, Foot, and Leg, are less frequently affected. —

The causes of Spontaneous Aneurism are very obscure, some writers account for their formation from sudden violent exertion, or from violent extension of the limbs, on this account Coachmen are more subject to Popliteal Aneurism than other persons; we have noticed that Blacksmiths frequently have the same affection; on the whole, we must say that the most plausible causes of the disease, are those given by Hodgson; though there is little doubt, but the disease may be produced in the above mentioned ways.

In considering the generally unhappy termination of aneurism when left without the aid of Medical or Surgical Treatment, how grateful ought we to be to those persons who by their unwearied exertions for the benefit of suffering man, have, it may almost be said, placed the means of life in the hands of the surgeons of the present day; but in bestowing

homage on our predecessors, we should not forget Nature, who, in her own peculiar way, often gives a favourable termination to our severest sufferings: of her wonderful efforts in the cure of disease, those of aneurism are not the least important: several cases of the kind are on record, attested by such authority as not to admit a doubt of their correctness.

According to Scarpa, nature endeavours to effect a cure in two ways — "1st by means of the adhesive inflammation, precisely in the same manner as simple incised wounds, the artery is changed into a perfectly ligamentous solid cord.

2dly likewise by means of the adhesive inflammation which changes the soft cellular substance of the incipient aneurismal sac into a capsule with thick firm sides, adhering strongly to the surrounding parts, within this membranous capsule a small coagulated clot of blood is formed, which being applied to the lips of the wound, or laceration of the artery, opposes the discharge of blood, and serves instead of

a cicatrization of the artery, the canal of which continues pervious as before." Spontaneous cures are often effected by the pressure of the tumour on the artery communicating with the sac; this happens when the disease is situated near a bone, a very interesting case is recorded by Dr. Parrish which occurred in the Hospital under the care of Dr. Physick where the tumour was situated between the artery and os Femoris,- as the sac increased in size, as it could not press in a posterior direction it projected forward, and putting the artery on the stretch, its internal surface was brought in contact,- adhesive inflammation was the consequence, and for the space of 4 inches, the cavity of this important vessel was closed, Another case is recorded by Dr. Mapey, an account of which is to be found in the E. Repertory Vol 8th No 4

We might enumerate numerous other cases of the kind, but as they are rare in comparison with those which require an operation for their radical cure, we will proceed to give some account of the treatment

employed for the cure of aneurism, and first of the Medical Treatment:

This is more particularly applicable to Internal or Deep-seated Aneurism, and several modes of treatment have been adopted by Surgeons; the most useful of which appears to consist in, Bleeding frequently repeated, Low Diet, internal use of Digitalis with a view of lessening the force of the circulation, Rest and Opiates.

There is not always much benefit to be expected from these means; though there is reason to believe that the rapid termination of the disease may in some measure be retarded, and in some instances a perfect cure may have been effected, we have the authority of Pelletan, Guattani, Basalva, and others to this effect. — No doubt in some cases this plan of treatment may be employed with propriety; but we think in the external or true superficial aneurism much more dependance is to be placed on the Surgical Treatment. According to